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October 5.

Dr. LeConte, Vice-President, in the chair.

Twenty-five members present.

The following papers were presented for publication:—

"On North American Noctuæ." By Aug. R. Grote.

"Notes on the Noctuidæ, with descriptions of certain new species, No. II." By H. K. Morrison.

"Description of a new species of Bird of Paradise of the genus Ptiloris, in the collection of the Academy." By James A. Ogden, M.D.

Observations on Lilies.—Mr. Thomas Meehan remarked that some bulbs of Lilium pardalinum, received last spring from Dr. W. P. Gibbons, had the scales articulated in the middle. The upper portion of the jointed scale fell off easily at the slightest touch, giving the blunt ends of the remaining portion the appearance of grains of Indian corn as they were arranged along the rhizome. Dr. H. N. Bolander has since informed him that it was a common characteristic of this species. It does not, however, appear to have been noticed by monographers of this genus. He had since found that the eastern Lilium superbum had the same character. It was, however, by no means regular. Some bulbs would have a large number of articulated scales, while others had but a few here and there; and they were as likely to be found among the inner as the outer scales. The scales of Lily bulbs were but the dilated and thickened bases of ordinary leaves. There were no articulations in the normal leaves, and it was difficult to trace any morphological relationship in these scale joints.

Another observation he had made on the failure of some bulbs of Lilium canadense to produce seed. He had received a few years ago some bulbs of this species from Mississippi. The flowers proved so remarkably large and beautiful, much superior to those of the northern plant, that he was in hopes to increase it by seeds, but not one seed-vessel formed—though a quantity of L. superbum growing near them set every flower. Supposing that this might be a case where fertilization from other flowers might be a benefit, pollen was applied from others of the species but all of the same Mississippi plants, with no better results. He wished to call particular attention to this little fact, because he believed that physiological agencies in fertilization and reproduction were often lost sight of in the discussions relating to the connection of flowers with insects in this matter. Some remarkable physiological facts had recently been brought to light by Mr. Francis Parkman, of Cambridge, Mass., the eminent historian and good botanist. He had endeavored to hybridize a number of species of Lily with the Japan L. auratum. To guard against the chance of fertilization by their own pollen, the anthers were cut from the flowers before they had perfected, and other precautions taken. There seemed to be no chance of any result but to produce hybrids, or not to seed at all, according to all that has been heretofore known of such subjects. But in every case but one of those which have so far blossomed, the seedlings are like the female parents. There was one remarkable hybrid, and one only. That the male parent should be potential for reproduction, and yet powerless to transmit the slightest trace of its own characteristics, he thought among the most wonderful of the recently discovered facts in vegetable physiology, and would render the Lily family an object of renewed interest.

As remarked before, some Lilium superbum growing near the others bore seeds freely, every flower perfectly, and, so far as he could see, without any special aid from insect agency. He had been interested in noting the remarkable manner in which the seed-vessels varied. He exhibited a number of capsules, selected from twenty-five plants, each plant bearing all its seed-vessels exactly after the pattern of each one exhibited. Some were about two inches long and linear, with rounded ends; others of the same character but with the end promorse, and giving a triquetrous character to the apex. Another had the carpellary edges perfectly smooth, another, perhaps, like it, with tumid raised edges. Then there were lanceolate, oblong, clavate, pyriform, and almost globose forms. In old times many of these characters would have been deemed of sufficient importance to found new species on; in times past, and in our own times under some prevailing theories, the variations would be looked for under some law of external influences modifying form. Without offering any opinion on these points, he would simply observe that all these plants were taken from one small spot at Berlin, New Jersey, and had all been growing in his garden under exactly the same circumstances together.

Remarks on—Rhizopods.—Prof. LEIDY made the following remarks relating to previous communications on Rhizopods: On my return, after an absence from home since last April, my attention has been called to a critical notice by Dr. G. C. Wallich, in the Annals and Magazine of Natural History for May, 1875, page 370, on my communications to the Academy on our fresh-water rhizopods. Dr. Wallich complains of my apparent inattention to his own researches on the same subjects, published in the Annals for 1863 and 1864. From the character of Dr. Wallich's remarks, I suspect that he has not examined my communications as pub lished in the Proceedings of this Academy. Thus he commences by saying that it had been brought to his notice that Prof. Leidy had published "in some of the American scientific journals an account of researches," and at the end of the article he expresses regret that I should have failed to make any reference whatever to his papers. Aside from the circumstance that my communications to the Academy were only brief verbal notices and not elaborate articles, I nevertheless think I have done no injustice to others in not referring to the literature on the subject, as I have laid claim to but little as new. In my first communication (Proc. Acad. Nat. Sci. 1874, p. 13), I state in general terms that I had recognized a large number of fresh-water protozoa as the same as those described by European authors, and likewise remark that among our fresh-water rhizopods I had observed most of the genera and species as indicated by European naturalists. Of the few names of the latter I have mentioned, that of Dr. Wallich is one, and this I could not have done had I not been familiar with his publications.

Dr. Wallich intimates that even my supposed discovery of the remarkable form for which I have suggested the name of *Ouramœba* has been included in his own published papers. From another notice by the same author, in the May number of the Monthly Microscopical Journal for 1875, page 210, it appears that *Amœba villosa* is the species which Dr. Wallich supposes I have redescribed under the name of *Ouramœba.* Although Mr. Archer, of Dublin, another able investigator of the rhizopods, regards *Ouramœba* as only another condition of *Amœba villosa* from that ordinarily observed, I am not prepared to accept this opinion, for reasons given in a communication to the Academy, and published in the Proceedings of April 20th, 1875, page 126.

In the latter notice of Dr. Wallich, while the author expresses the conviction that I published my papers in ignorance of his having handled the same subjects long before me, he also regrets that I do not entertain the same opinion that he did in regard to the interpretation of characters said to involve generic and specific distinctions.

While extended researches have led me to incline more and more to the views expressed by Dr. Wallich in his exhaustive papers, my published remarks sufficiently indicate that I had not neglected these; for in the particular ones to which he refers, I have either mentioned his name or those of species which he has described.

In conclusion, while regretting that Dr. Wallich or any one else should have occasion to reproach me with neglect of the labors of others, I take the opportunity of stating that my communications to the Academy on the rhizopods have been brief verbal remarks, introductory to the publication of a monograph on the fresh-water forms, in which I shall endeavor to do justice to all who have preceded me in the same field.

While speaking of rhizopods, I may mention that there are two articles on the subject in the last two numbers of the Archiv f. Mikroskopische Anatomie, by F. E. Schulze, entitled Rhizopodenstudien. In these papers several forms are described, which have also come under my observation.

The difflugian described by Schulze as *Quadrula symmetrica*, and first noticed by Dr. Wallich as *Difflugia symmetrica*, with a test composed of quadrate plates, I have also found in several localities in New Jersey.

A difflugian, with a structureless test, referred by Schulze to the genus *Hyalosphenia* of Stein, and described by him with the name of *H. lata*, is the same as the *Difflugia ligata* of Tatem, which I had referred with several other species to a genus under the name of *Catharia*. I had not had access to the work in which *Hyalosphenia* was characterized, and which has priority to *Catharia*. The difflugians referable to it are as follows:—

1. **Hyalosphenia ligata:** Syn. *Difflugia ligata*, Tatem; *Catharia ligata*, Leidy; *Hyalosphenia lata*, Schulze.
2. **Hyalosphenia papilio:** Syn. *Catharia papilio*, Leidy.
3. **Hyalosphenia elegans:** Syn. *Catharia elegans*, Leidy.

The amœban which I have described under the name of *Dinamœba* is almost identical with that described by Schulze with the name of *Mastigamœba* (fig. 1, Taf. xxxv.), and which is probably the same as the *Amœba monociliata* of Carter. *Dinamœba* is, however, devoid of the characteristic flagellum ascribed to the forms of Schulze and Carter. It may, perhaps, prove to be the same as *Dactylosphærium* of Hertwig and Lesser, the description of which appeared in the Archiv nearly at the same time as that of *Dinamœba* appeared in the published Proceedings of the Academy. The former is described as being invested with minute villous appendages of protoplasm, but the latter is covered with minute bacterium-like spicules, such as are represented to exist in *Mastigamœba*.

OCTOBER 12.

The President, Dr. RUSCHENBERGER, in the chair.

Thirty-five members present.

Quercus heterophylla.—Prof. LEIDY exhibited a branch of *Quercus heterophylla* which he had obtained from a large tree, growing on the farm of Mr. J. I. Bishop, in Burlington County, New Jersey. The foliage, he thought, indicated a hybrid between Q. phellos and Q. palustris. He recommended the introduction of this rare hybrid oak into our city park.